United States
Department of
Agriculture

Soil
Conservation
Service

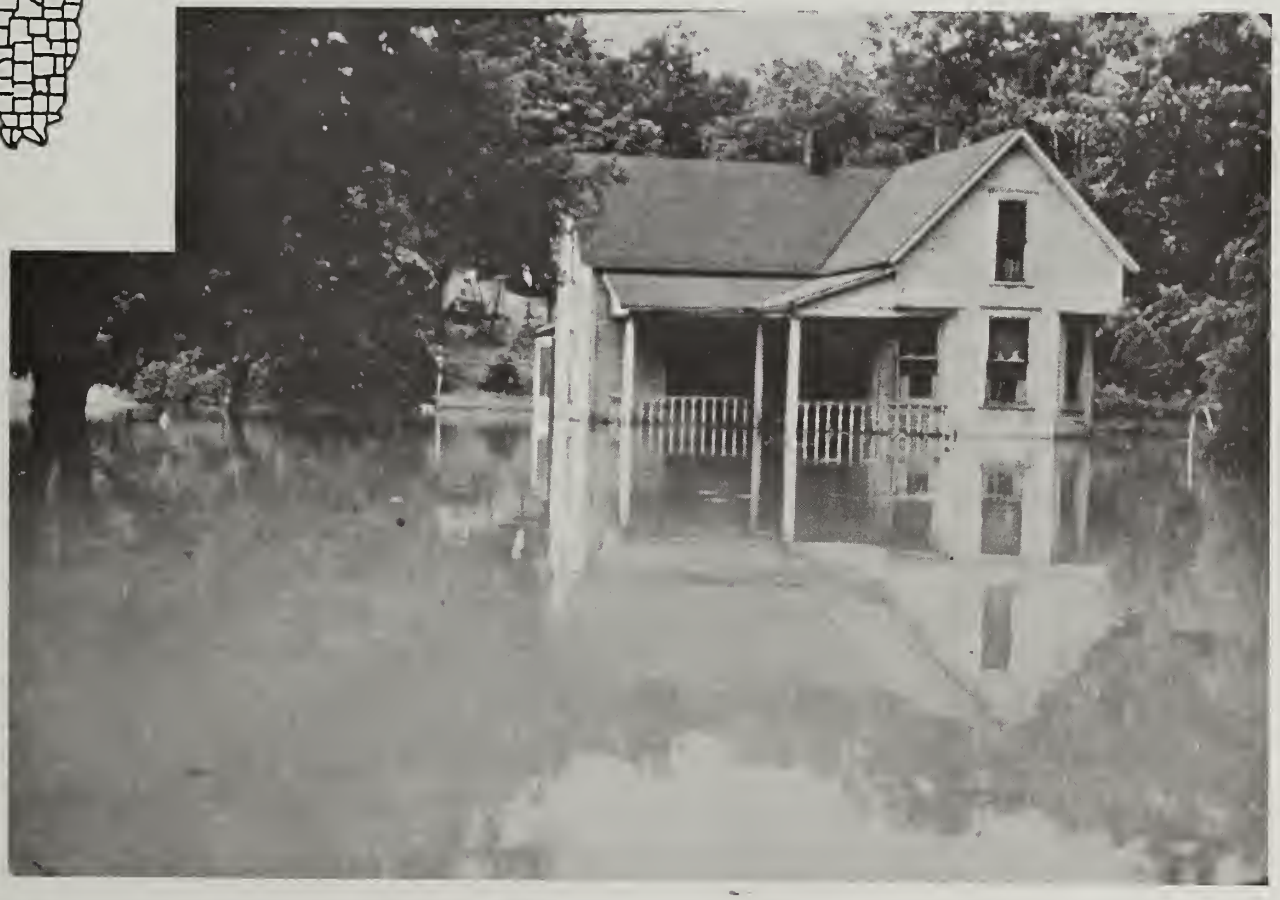
Champaign
Illinois

Department of
Transportation
Division of
Water Resources

Illinois

FLOODPLAIN MANAGEMENT RECONNAISSANCE STUDY REPORT

GULFPORT HENDERSON COUNTY



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VILLAGE OF GULFPORT,

HENDERSON COUNTY, ILLINOIS

FLOODPLAIN MANAGEMENT

RECONNAISSANCE STUDY

Prepared by

US DEPARTMENT OF AGRICULTURE,

SOIL CONSERVATION SERVICE

Champaign, Illinois

In cooperation with

STATE OF ILLINOIS,

DEPARTMENT OF TRANSPORTATION,

DIVISION OF WATER RESOURCES

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VILLAGE OF GULFPORT

RECONNAISSANCE STUDY

INTRODUCTION

Use of floodprone areas can be a severe problem in Illinois. Urbanization and floodplain encroachment are increasing the severity of this problem. Over 800 communities in Illinois have been identified as having flooding problems.

The Illinois Division of Water Resources (DWR) is the responsible state agency for urban flood control and for setting priorities of flood studies within urban areas. The Soil Conservation Service is providing assistance to the Division of Water Resources in setting these priorities. A joint coordination agreement was executed between the Division of Water Resources, State of Illinois, and the USDA, Soil Conservation Service on April 30, 1976 and revised in December 1978 to furnish technical assistance in carrying out Flood Hazard Studies. These studies are carried out in accordance with Federal Level Recommendation 3 of "A Unified National Program for Floodplain Management", and under Section 6 of Public Law 83-566. A plan of study was executed in October 1985 for reconnaissance studies for 10 Illinois communities. These reconnaissance studies will utilize existing floodplain information, historical high water profiles, and the 100 year floodplain from flood insurance studies when available. Average annual damages are estimated for the structures within the floodplain.

The study was conducted and the report provided for the following purposes: 1) to evaluate needs for additional future studies, 2) to estimate average annual damages, 3) to provide an updated estimate of the 100 year floodplain map, and 4) to provide guidance and recommendations to the community for improved floodplain management.

STUDY AREA DESCRIPTION

The Village of Gulfport is located in Henderson County, just across the Mississippi River from Burlington, Iowa. The population is 224, according to the 1980 census.

Transportation facilities within the Gulfport area consist of United States Route #34, United States Route #61 in Burlington, Iowa, and the Mississippi River. The Burlington Northern Railroad goes through Gulfport as well as across the river to Burlngton. Barge traffic is very heavy along this reach of the river.

Gulfport is protected from floodwaters by a levee along the Mississippi River. This levee is constructed to protect the area from less than the 100 year flood, but more than the 50 year flood. The levee breached in 1965, causing the most severe flooding in the history of Gulfport. The flooding of the Mississippi River in 1971 caused higher water levels than in 1965, but the levee held and only minor problems were experienced.

The main concern for the residents of Gulfport is the Mississippi River. An extremely large rainfall, ice jams, and spring thaws with additional rainfall are some of the events about which the residents worry. Any combination of the above problems may cause difficulties for the existing levee. The drainage area at the gauging station, 05474500, near Keokuk, Iowa is 119,000 square miles. The drainage is in the Mississippi River Basin hydrologic unit #07080104, subwatershed #150.

Rainfall for the area is approximately 36.5 inches, much of which occurs in the spring months; but which can occur at any time of the year. Since the majority of the land use of the watershed is cropland, the time of the year that heavy rains occur will find different amounts of cover on the ground. This will affect the runoff rate.

The main soils in and around Gulfport are Sawmill silty clay loam which is naturally poorly drained, and Beardstown loam which has moderate surface drainage. Pockets of sand and muck are likely to be found in these units. These soils are found in silty wind blown material, or loess and drift. They are not well suited for urban uses, roads or sanitary facilities because of their high moisture holding capacity, low permeability and seasonable high water table. The soils information is from the 1956 Henderson County Soils Report #77, by the University of Illinois. As of this time, newer soils information is not available for Henderson County.

NATURAL VALUES

The Village of Gulfport is located in an area that is mainly agricultural with very few livestock remaining on the farms. However, in the immediate area, several wooded areas and various lakes are present. The existing ditches and small streams, as well as the Mississippi River are heavily tree lined which provides a significant amount of varying quality riparian habitat as well as important travel routes for wildlife.

These combinations provide for a wide range of plant and animal species which generally makes the area a pleasant place to live, work and play.

FLOOD PROBLEMS

Major flooding in the Village of Gulfport will occur if flows in the Mississippi River exceed a 50 year frequency flood, or if the levee breaches. Otherwise, only minor ponding will occur at the west side of the community during a large intense rainfall. This in turn will probably have to be pumped away from the community, as existing culverts are unable to handle the "trapped water".

The entire community of Gulfport is within the Mississippi River 100 year floodplain. A flood of this magnitude would completely inundate the entire village. Damages would exceed $2,225,000 since contents of homes, businesses, garages, sheds, and automobiles would be extensively damaged or completely ruined, if not previously moved to an elevation above the 100 year frequency flood.

The entire village is operating with individual septic systems, as Gulfport does not have a sewage treatment plant. Problems with these systems occur during large rainfalls or prolonged wet periods. Individual wells supply the water for the community's residents. These are very shallow wells and some are subject to surface water problems during the intense rainfalls. Storm sewers are not installed or planned at this time. These problems add to the existing mosquito and possible water quality problems of the community.

At present, no homes with basements are known to exist in the village. New home construction has occurred east of the main part of the village adjacent to a small lake that is now within the village limits. This development has been minor, and the area does not expect to expand to any large extent in the near future. They are however, in the 100 year floodplain.

Several summer homes and cottages are located between the Mississippi River and the existing levees. Some of these suffer water damages each year, with the possibility of multiple flooding events during the year.

The west edge of Gulfport is low and does experience ponded water problems during larger rainfall events. These cause street and lawn damages in the area. The rest of the village experiences only minor water problems during the larger rainfall events. When needed, the village does have the capabilities to pump excess runoff and seepage water out of the community, with portable pumps and fire trucks.

PROBLEM SUMMARIES

Estimated average annual damages from flooding and ponding to the properties in Gulfport are as follows:

Number of Homes & Trailers	Number of Garages & Sheds	Number of Businesses	Total Value	Average Annual Damages
139	48	12	$3,850,000	$27,300

Additional damages caused by flooding and ponded conditions are as follows.

Street maintenance	$3,000
Septic system repairs & maintenance	3,500
Yard damages	3,000
Total additional expense	$9,500

Estimated average annual damages for the Village of Gulfport equals $36,800. It is estimated that flood damages starts at the 5 year frequency storm.

In the event of a 100 year frequency flood, the damages would exceed $2,225,000 and possibly destroy most of the community. Many acres of agricultural land would also suffer very heavy losses during a storm of this magnitude.

EXISTING FLOODPLAIN MANAGEMENT

The Village of Gulfport converted to the regular phase of the National Flood Insurance Program on October 15, 1985. Henderson County converted to the regular program on March 4, 1986. As such, the village and the county have a floodplain ordinance in effect regulating new development in the floodplain.

RECOMMENDATIONS

It is recommended that the Village of Gulfport actively enforce its floodplain ordinance to ensure new development in the floodplain is free from flood damages. They should also continue to participate in the National Flood Insurance Program.

Existing septic systems must be kept in proper working condition to avoid possible health hazards. Since the seasonal groundwater table is very high in the spring of the year, these septic systems will require more care at this time. Any new systems constructed should have an adequate filter field attached to the septic system. Correct procedures for installing this type of system may be obtained from the local Soil & Water Conservation District office and the County Health Department.

The village should develop an emergency action plan with the county Emergency Services and Disaster Agency (ESDA) assuming the leadership. Using such a plan, the community could evacuate when the river reaches a predetermined critical elevation. In addition to the possibility of saving lives, many dollars of personal property could also be saved by evacuation.

It would be advisable for the village to make provisions for spraying to control the mosquito problem. This type of high breeding habitat for mosquitoes will have to be watched and action taken when necessary to control a problem that could be potentially dangerous.

After large rainfalls, water from the wells should be tested to be sure it is safe for consumption, especially those on the west end of the community.

A low priority should be assigned for future detailed floodplain management studies in Gulfport.

INVESTIGATION AND ANALYSIS

No additional calculations, discharges, or profiles were made as a part of this study. The inventory of flooding and water problems is based on a field review and interviews with local citizens.

The 1985 Village of Gulfport and 1986 Henderson County Flood Insurance Studies and Flood Insurance Rate Maps were used to determine the 100 year floodplain. The only change would be that Route #34 has been built up and is mostly above the 100 year floodplain elevation.

Aerial photographs were provided by the Division of Water Resources. Damages were based on property value estimates during the field review, and the application of damages factors. These factors came from previous detailed floodplain management studies.

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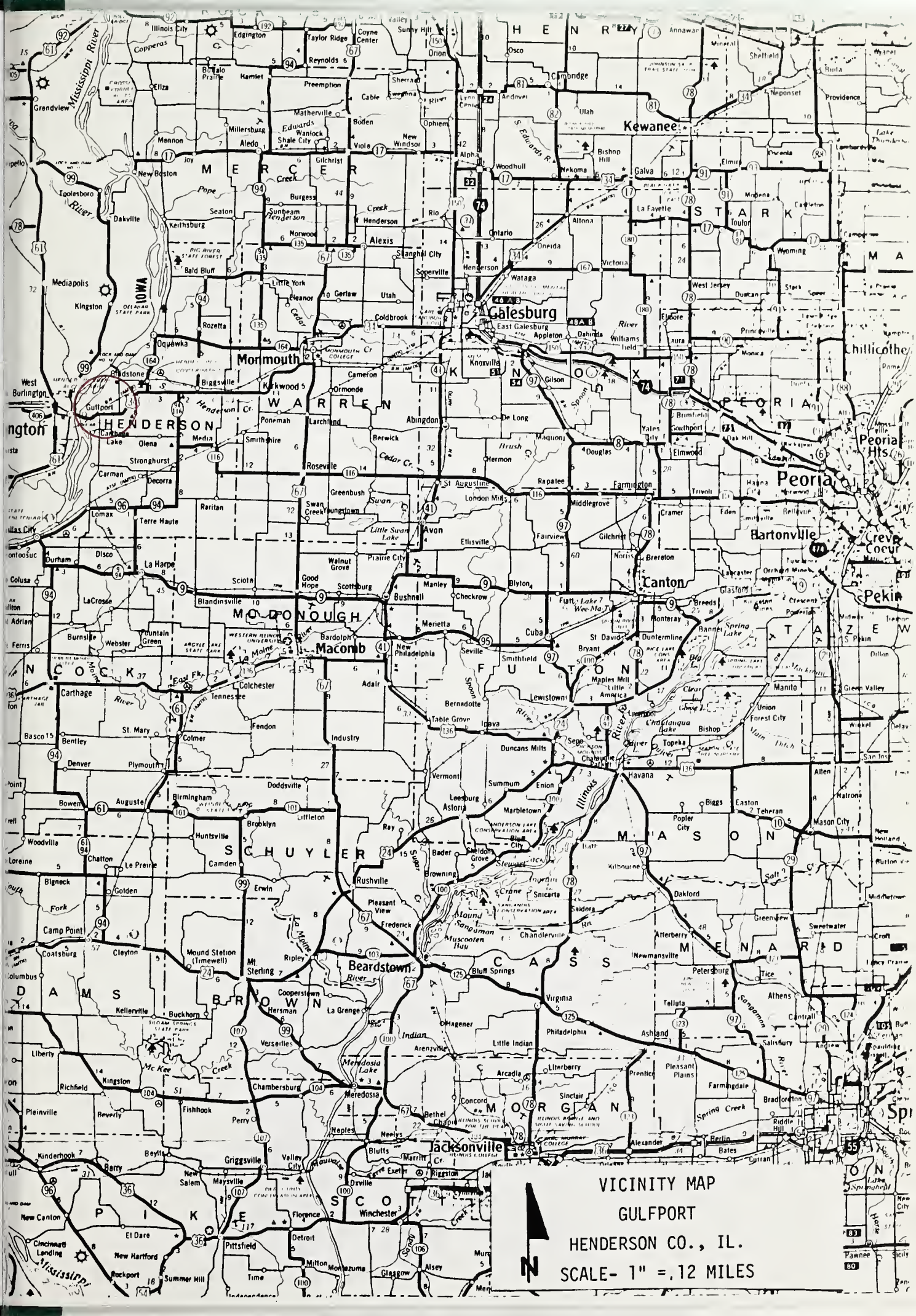
VICINITY MAP
GULFPORT
HENDERSON CO., IL.
SCALE- 1" =.12 MILES
N
Gulfport
Henderson
Monmouth
Galesburg
Kewanee
Macomb
Canton
Jacksonville
Beardstown
Peoria
Bartonville
Pekin
Mississippi River
Illinois River
Spoon River
La Moine River
Edwards River
Copperas
Pope Creek
Henderson Creek
Cedar Creek
Swan Creek
Little Swan Lake
Lake Carthage
Meredosia Lake
Indian Creek
Mc Kee Creek
Sangamon River
Spring Creek
Lake Chautauqua
Lake 7 Wee-Ma-Te
Spring Lake
Lake Thunderbird
Lake Storey
Lake Sinclair
Lake Springfield
Lake Pawnee
Lake Sicily
Lake Decatur
Lake Shelbyville
Lake Carlyle
Lake Mattoon
Lake Paradise
Lake Glenwood
Lake Bracken
Lake Meredosia
Lake Peoria
Lake Evergreen
Lake Bloomington
Lake Vermilion
Lake Michigan
Lake Erie
Lake Ontario
Lake Huron
Lake Superior
Lake Winnebago
Lake Koshkonong
Lake Geneva
Lake Delavan
Lake Mendota
Lake Monona
Lake Wingra
Lake Waubesa
Lake Kegonsa
Lake Wisconsin
Lake Petenwell
Lake Dubay
Lake Nokomis
Lake Minnetonka
Lake Pepin
Lake Winnibigoshish
Lake Itasca
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
Lake Winnebago
Lake Koshkonong
Lake Geneva
Lake Delavan
Lake Mendota
Lake Monona
Lake Wingra
Lake Waubesa
Lake Kegonsa
Lake Wisconsin
Lake Petenwell
Lake Dubay
Lake Nokomis
Lake Minnetonka
Lake Pepin
Lake Winnibigoshish
Lake Itasca

ENTIRE MAP IS IN 100 YEAR FLOODPLAIN

(EXCEPT FOR U.S. ROUTE #34)

MISSISSIPPI RIVER

FIRST ST

ASH AVE

BEHOLDEN AVE

PARK AVE

BROADWAY ST

EGAN ST

BUSTEMEYER AVE

MELVINA AVE

SMITH ST

BURLINGTON NORTHERN RAILROAD

34

33 34
4 3

9 10

ORCHARD LAKE

LEVEE

MISSISSIPPI RIVER

ABANDONED RAILROAD

CARTHAGE LAKE

NORTH

400' 0 400'

APPROXIMATE SCALE

LEGEND

CORPORATE LIMITS

EXCEPT FOR U.S. ROUTE #34

100 YEAR FLOODPLAIN

(ENTIRE MAP IS IN 100 YEAR FLOOD PLAIN)

SURFACE WATER

LEVEE

NOTE

THIS MAP WAS DEVELOPED FROM AVAILABLE HISTORIC DATA AND OTHER FIELD REVIEWED INFORMATION. NO DETAILED HYDROLOGIC OR HYDRAULIC ANALYSES WERE MADE.

GULFPORT
HENDERSON CO. IL

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed
Drawn 2/1/16
Traced
Checked
Approved by
Title
Scale
Drawing No.
Sheet No. of